

## **REMARKS**

### **I. Status of the Application**

Claims 1-8, 10-56 are presently pending in the application. Claims 16-36 stand withdrawn from further consideration as being directed to a non-elected invention. Applicants thank the Examiner for the indication at page 3 of the Office Action that the written description and enablement rejections of claims 1-8, 10-15 and 37-39 have been withdrawn. Applicants further thank the Examiner for withdrawing, at page 3 of the office action, the rejections to claims 1, 2-5, 10, 40 and 50 based on 35 U.S.C. sec. 112, second paragraph. Finally, applicants thank the Examiner for withdrawing, at page 3 of the office action, the art rejections based on Holmes and Brennan and the obviousness-type double patenting rejection over US Patent No. 6,576,425.

Claim 10 has been amended in the manner suggested by the Examiner to overcome the rejection under 35 U.S.C. § 112, second paragraph by reciting “wherein biological polymers of the test array are preselected to be the same as preselected biological polymers of the reference array.” Applicants respectfully submit that the present amendment is derived from page 18 lines 27-29 where identical sets of arrays subjected to test conditions are disclosed.

The only remaining rejections are those of claims 40-56 as lacking written description and enablement. Applicants respectfully traverse those rejections for the reasons set forth below.

### **II. Claims 40-56 Satisfy the Written Description Requirement**

Claims 40-56 stand rejected under 35 U.S.C. § 112, ¶1 as lacking adequate written description. Applicants respectfully traverse the rejection in view of the amendments and remarks presented here. Applicants further incorporate herein with respect to claims 40-56

applicants' response to the written description and enablement rejections as set forth in the amendment and response filed December 5, 2003.

Applicants respectfully believe that one of skill in the art would be in possession of the invention insofar as it relates to polymers in general. Applicants disclose in the beginning of the Summary at page 3, lines 8-10: "the present invention provides methods and compositions to monitor the synthesis and coupling of monomers and polymers to solid substrates, *e.g.* VLSIPST<sup>TM</sup> arrays." Applicants further disclose shortly thereafter at page 3, line 27 – page 4, line 4:

The methods are generally suitable to any polymer array, **regardless of the type of polymer**. Thus, the efficiency of synthesis for biological polymers such as proteins, nucleic acids, antigens, and venoms are monitored using the above method. **Non-biological polymers such as carbon chains, vinyls, alcohols, and other polymers are similarly monitored**. The polymer array is typically provided by synthesizing the array on the solid substrate, but the array can also be provided by synthesizing the polymers to be attached to the array in solution, and subsequently attaching the polymers to pre-selected sites in the array. (Emphasis added).

Moreover, Applicants provide a sufficient description of a representative number of species of polymers by actual reduction to practice. Applicants' description of labeling polymers *for at least 14 pages* between pages 25 and 39 of the present application is sufficient to convey to skilled artisans that they were in possession of the claimed subject matter at the time of filing. For instance, at page 25, lines 22-27, Applicants state:

In preferred embodiments, labels of the present invention have the structure A-B, where A is a detectable moiety, and B is a 'linking' or 'bridging' group which comprises one or more functional regions which allow the detectable moiety to be incorporated into a polymer, or attached to one end of the polymer, using chemistry similar to that used to connect monomers into the polymer.

It is more than apparent that the present application evidences Applicants' possession of non-biological polymers at the time of filing.

Further, those of skill in the art certainly would realize that the presently disclosed methods concern not only oligonucleotides and peptides, but also any polymer since oligonucleotides and peptides are just exemplary polymers. *The specification directly discloses “artificial polymers” at page 4 line 25 of the application.* The specification provides no reason, and none has been advanced by the Examiner, for those of skill in the art to believe that the synthesis of oligonucleotides and peptides are not comparable to the synthesis of other polymers from a chemical synthesis point of view. The chemistry remains analogous.

### **III. Claims 40-56 Satisfy the Enablement Requirement**

In the present office action at page 6, the Examiner criticizes the Green et al. reference as being unclear how its protecting groups are used in the claimed method. Applicants respectfully point out that Green et al. was relied on for the teaching that protecting groups are not limited to biological polymers, but that protecting groups would also be understood by those skilled in the art to be useful during the manufacture of other polymers. The Examiner has cited nothing in Green et al. that would prevent its application to polymers other than biological polymers.

Further, contrary to the Examiner assertion, the specification does provide guidance on how to make polymers by reacting monomers and further that nonbiological polymers are contemplated. Applicants disclose at page 15 synthetic polymers suitable for the presently disclosed methods.

Synthetic polymers such as heteropolymers in which a known drug is covalently bound to any of the above, such as polyurethanes, polyesters, polycarbonates, polyureas, polyamides, polyethyleneimines, polyarylene sulfides, polysiloxanes, polyimides, and polyacetates are also included. Other polymers will also be apparent to one of skill upon review of this disclosure.

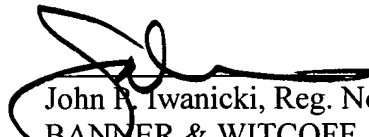
Thus, the specification adequately supports the breadth of the claim term "diverse polymers".

**IV. Conclusion**

Applicants respectfully submit that claims 40-56 meet the written description and enablement requires.

Respectfully submitted,

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